Volunteer Lake Assessment Program Individual Lake Reports

ANGLE POND, SANDOWN, NH

MORPHOMETRIC DATA

Watershed Area (Ac.):	1,511	**Max. Depth (m):**	11.6	**Flushing Rate (yr^{-1})**	1.5
Surface Area (Ac.):	150	**Mean Depth (m):**	3	**P Retention Coef:**	0.68
Shore Length (m):	4,000	**Volume (m^3):**	1,924,500	**Elevation (ft):**	220

TROPHIC CLASSIFICATION

Year	Trophic class
1984	EUTROPHIC
2002	MESOTROPHIC

KNOWN EXOTIC SPECIES

The Waterbody Report Card tables are generated from the 2012 305(b) report on the status of N.H. waters, and are based on data collected from 2001-2011.

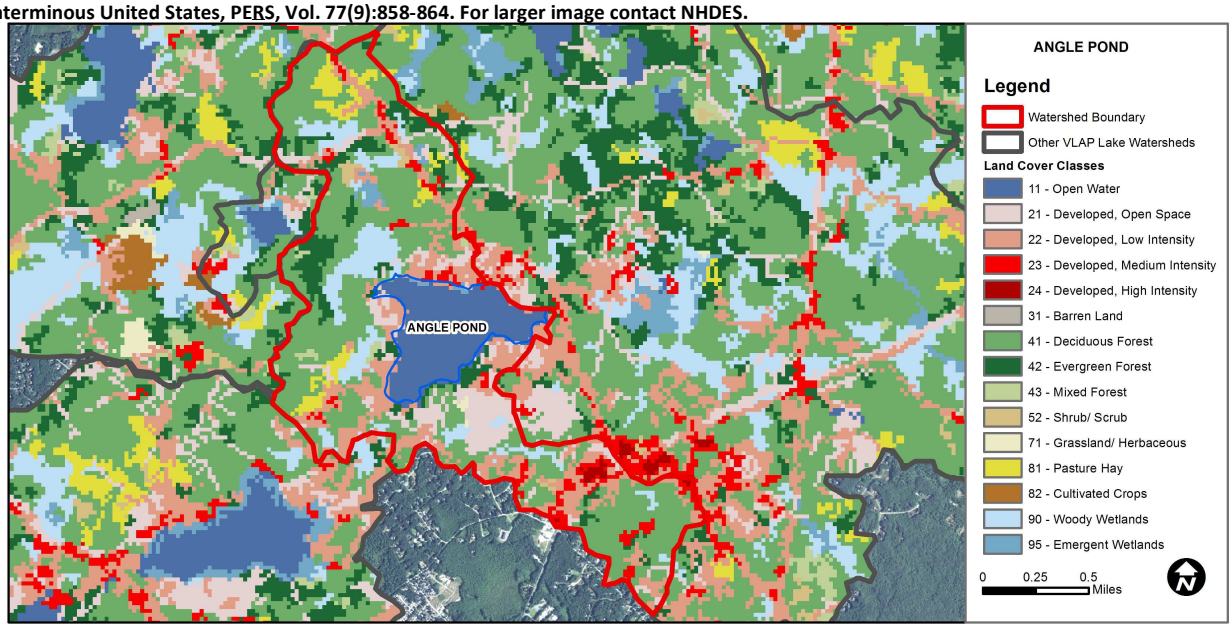
Designated Use	Parameter	Category	Comments
Aquatic Life	Phosphorus (Total)	Slightly Bad	>/=5 samples and median is >threshold.
	pH	Slightly Bad	>10% of samples exceed criteria by a small margin (minimum of 2 exceedances).
	D.O. (mg/L)	Encouraging	< 10 samples and no exceedance of criteria. More data needed.
	D.O. (% sat)	Encouraging	< 10 samples and no exceedance of criteria. More data needed.
	Chlorophyll-a	Slightly Bad	>5 samples and median is > threshold.
Primary Contact Recreation	E. coli	No Data	No Data for this parameter.
	Cyanobacteria	Slightly Bad	Cyanobacteria bloom(s).
	Chlorophyll-a	Very Good	At least 10 samples with 0 exceedances of criteria.

BEACH PRIMARY CONTACT ASSESSMENT STATUS

ANGLE POND - ANGLE POND GROVE BEACH	E. coli	Good	Geometric means < criteria; however at least 1 exceedance of the single sample criteria occurred.

WATERSHED LAND USE SUMMARY

Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011. Completion of the 2006 National Land Cover Database for the Conterminous United States, PERS, Vol. 77(9):858-864. For larger image contact NHDES.



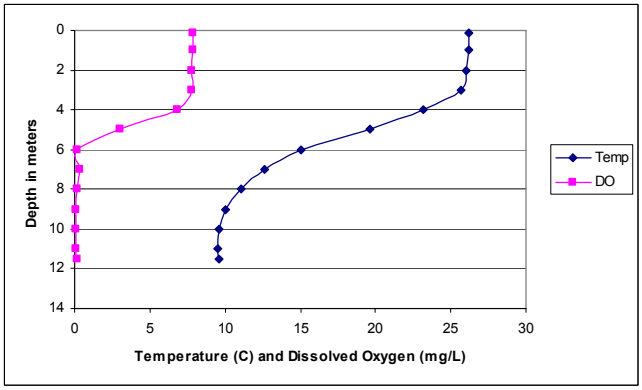
Land Cover Category	% Cover	Land Cover Category	% Cover	Land Cover Category	% Cover
Open Water	11.9	Barren Land	0	Grassland/Herbaceous	0.17
Developed-Open Space	8.55	Deciduous Forest	38.36	Pasture Hay	3.27
Developed-Low Intensity	15.6	Evergreen Forest	7.11	Cultivated Crops	0
Developed-Medium Intensity	4.03	Mixed Forest	0.64	Woody Wetlands	7.93
Developed-High Intensity	0.45	Shrub-Scrub	0.75	Emergent Wetlands	0.86

VOLUNTEER LAKE ASSESSMENT PROGRAM INDIVIDUAL LAKE REPORTS
ANGLE POND, SANDOWN, NH
2012 DATA SUMMARY

OBSERVATIONS AND RECOMMENDATIONS (*Refer to Table 1 and Historical Deep Spot Data Graphic)*

- **CHLOROPHYLL-A:** Average chlorophyll levels were low in 2012 and were the lowest measured since monitoring began.
- **CONDUCTIVITY/CHLORIDE:** Deep spot and tributary chloride and conductivity levels were elevated. In particular, levels in Sayre Inlet and the East Lane Pipe were very high.
- **TOTAL PHOSPHORUS:** Deep spot phosphorus levels were relatively low in the epilimnion (upper water layer) but increased in the hypolimnion (lower water layer) likely due to the lack of dissolved oxygen and subsequent phosphorus release from lake sediments. Sayre Inlet and East Lane Pipe experience elevated phosphorus, but turbidities were also elevated indicating potential sediment and/or organic material in sample.
- **TRANSPARENCY:** 2012 average transparency was the deepest measured since monitoring began; likely due to the decreased chlorophyll levels. We hope to see this continue!
- **TURBIDITY:** Turbidity levels at Sayre Inlet and East Lane Pipe were elevated likely due to sediment and/or organic material. Tributary flow was diminished in 2012 and samples were collected in June only.
- **PH:** Epilimnetic pH levels were sufficient to support aquatic life, however pH decreased in the metalimnion (middle water layer) and hypolimnion (lower water layer) to undesirable levels. pH in North Inlet is lower due to wetland influences.
- **RECOMMENDED ACTIONS:** Historically, elevated conductivity/chloride in Sayre Inlet was a result of water softener discharge from an upstream property. This issue was addressed in 2009 with property owner, however may need further follow-up. Elevated conductivity in East Lane Pipe likely due to road salting; continue monitoring and add chloride. Phosphorus and turbidity were also elevated in East Lane Pipe; additional investigation into pipe origin and discharge should be conducted. Overall, 2012 was a dry year with decreased tributary and stormwater impacts resulting in lower lake phosphorus and chlorophyll levels and higher lake transparency. This highlights the importance of implementing stormwater management activities in the watershed.

Dissolved Oxygen & Temperature Profile



NH Water Quality Standards: Numeric criteria for specific parameters. Results exceeding criteria are considered a water quality violation.
Chloride: < 230 mg/L (chronic)
E. coli: > 88 cts/100 mL – public beach
E. coli: > 406 cts/100 mL – surface waters
Turbidity: > 10 NTU above natural level
pH: 6.5-8.0 (unless naturally occurring)

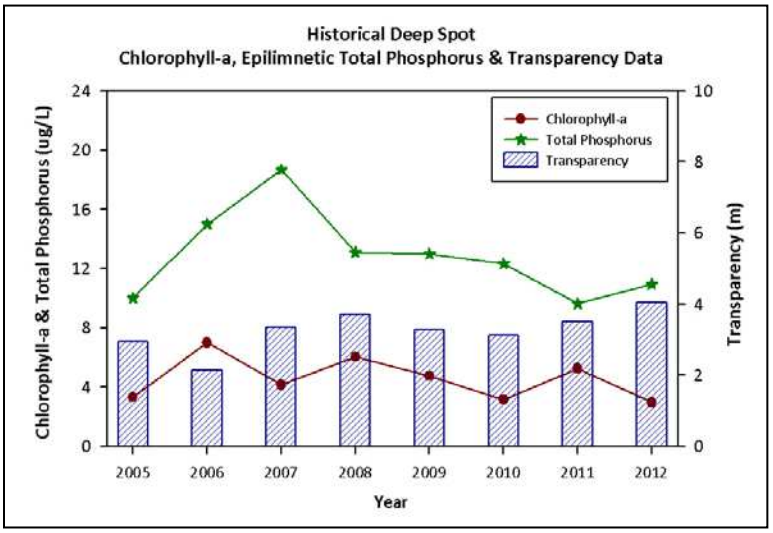
Table 1. 2012 Average Water Quality Data for ANGLE POND

Station Name	Alk.	Chlor-a	Chloride	Cond.	Total P	Trans.		Turb.	pH
	mg/l	ug/l	mg/l	uS/cm	ug/l	m		ntu	
						NVS	VS		
East Lane Pipe				509.0	34			10.3	6.56
Deep Epilimnion	17.0	2.96	35	194.0	11	4.04	4.48	0.7	7.27
Deep Metalimnion				191.1	17			1.63	6.61
Deep Hypolimnion				191.0	23			4.34	6.47
North Inlet			25	144.0	52			1.34	6.22
Outlet				183.0	19			0.75	6.9
Sayre Inlet			55	254.0	180			9.55	6.8

NH Median Values: Median values for specific parameters generated from historic lake monitoring data.
Alkalinity: 4.9 mg/L
Chlorophyll-a: 4.58 mg/m^3
Conductivity: 40.0 uS/cm
Chloride: 4 mg/L
Total Phosphorus: 12 ug/L
Transparency: 3.2 m
pH: 6.6

HISTORICAL WATER QUALITY TREND ANALYSIS

Parameter	Trend	Explanation
Chlorophyll-a	N/A	More data necessary to determine trends.
Transparency	N/A	More data necessary to determine trends.
Phosphorus (epilimnion)	N/A	More data necessary to determine trends.



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